

# Science Thursday or Friday: Bringing Current Science into the Philosophy of Science Classroom

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## **The Problem and Standard Solution**

Philosophers who teach the Philosophy of Science face a problem: how can one be sure one's students have sufficient understanding of examples from current scientific practice and the history of science to make sense out of the many conflicting issues in the philosophy of science?

The standard solution is to spend a lot of class-time reviewing the history of science and recent major developments. But, instructors are typically not expert in these areas, so a lot of poor and inefficient instruction results.

## **Science Friday Alternative**

The "Science Friday" alternative takes advantage of student technological skills, as well as student's personal interest. Students are assigned the task of finding and presenting a relevant piece of science or history of science that helps them and their classmates better understand how complex and conflicting ideas in the Philosophy of Science apply to the variety of real examples that students present.

## **Dozen Science Friday Assignments**

1. Find an example of science that fits your current favorite definition of science: explain the fit
2. Find a current example of pseudo-science, explain why it's only "pseudo"
3. Find a recent discovery or discussion involving Evolution, Creation Science or Intelligent Design, assess the claims
4. Find 2 recent discussions of Scientific Inference supporting two of: Hempel, Popper, Duhem, or Lipton
5. Find a newly discovered Law of Nature and assess the evidence that it is not a mere accidental generalization.
6. Find an example of a Scientific Explanation that actually fits the Deductive-Nomological Model
7. Find a recent example of a Teleological Explanation: assess whether it can be reduced to a mechanical account
8. Find a recent Social Science Explanation, explain how it differs from standard natural science explanations
9. Find an instance of a genuine Scientific Reduction of higher level phenomena to lower level phenomena
10. Find a recent case of Socially Responsible Science, explain why the case demonstrates social responsibility
11. Find a newly proposed theoretical entity, explain the motivation or proposing it, assess the current evidence for its real existence
12. Find an item that indicates a serious clash between religion and science

## **Uses of Science Friday Items**

- A. Serve as course discussion reference points throughout the entire semester.
- B. Provide real examples of Philosophy of Science concepts for quizzes. Exams, essays and papers.
- C. Provide interesting case studies for comparative in-class group work.
- D. Portfolio Assignment: Assemble the 12 assigned Science Friday in a single document, explaining how each item meets assigned requirements.

## **Some Worries and Replies**

- Worry: Students don't know enough science  
Reply: Good current science writing helps
- Worry: Students will all pick same hot cases  
Reply: Cases complex enough for sharing
- Worry: Not enough time for all students  
Reply: Determine overlap, organize sharing
- Worry: Not enough time; Reply: take turns

## **Pedagogical Advantages**

1. Students are interested in the cases they find, remember them for future class discussion and future assignments.
2. Students learn from other students many more examples of interesting scientific phenomena than instructor alone could provide.
3. Students develop the habit of reading about interesting cases of science, an important life skill.